

ABSTRACT OF THE DISCLOSURE

An optical fiber array including a substrate having a grooved portion and a planar portion which are formed integrally on opposite sides of a shoulder, and wherein the grooved portion has a plurality of grooves each defined by two side walls forming a predetermined angle therebetween, and a plurality of optical fibers are accommodated within the respective grooves and supported by the planar portion. Each of the optical fibers accommodated in the grooves is forced onto the two side walls by a covering plate disposed on the grooved portion, and thereby positioned. A gap having a transverse cross sectional surface area $S1$ is formed between each optical fiber and the upper surface of the substrate, while a gap having a transverse cross sectional surface area $S2$ is formed between each groove and the optical fiber, such that the area $S1$ is larger than the area $S2$, and the gaps between the optical fiber and the substrate and covering plate are filled with an adhesive agent to integrally bond the optical fibers to the substrate.